

WHAT IS CLAIMED IS:

1. An ePTFE self-sealing graft comprising:
a first ePTFE tubular structure having a first porosity;
a second ePTFE tubular structure having a second porosity less than said first porosity,
said second ePTFE tubular structure being disposed externally about said first ePTFE tubular structure; and
a resealable polymer layer interposed between said first and second ePTFE tubular structures.
2. An ePTFE self-sealing graft according to claim 1 wherein said resealable polymer layer comprises an elastomeric layer.
3. An ePTFE self-sealing graft according to claim 2 wherein said resealable polymer layer adheres to said first and second ePTFE tubular structures.
4. An ePTFE self-sealing graft according to claim 2 wherein said elastomeric polymer layer is a fluoropolymer.
5. An ePTFE self-sealing graft according to claim 2 wherein said elastomeric polymer layer comprises a helically wound tape.
6. An ePTFE self-sealing graft according to claim 2 wherein said elastomeric polymer layer comprises a silicon compound.
7. An ePTFE self-sealing graft according to claim 1 wherein said resealable polymer layer comprises a flowable layer.

8. An ePTFE self-sealing graft according to claim 7 wherein said resealable polymer layer comprises a polymer which penetrates said first and second ePTFE tubular structures.

9. An ePTFE self-sealing graft according to claim 7 wherein said resealable polymer layer adheres to said first and second ePTFE tubular structures.

10. An ePTFE self-sealing graft according to claim 7 wherein said resealable layer is a fluoropolymer.

11. An ePTFE self-sealing graft according to claim 7 wherein said flowable layer comprises a gel.

12. An ePTFE self-sealing graft according to claim 11 wherein said gel further includes comprises polymeric beads suspended within said gel.

13. An ePTFE self-sealing graft according to claim 7 wherein said flowable polymer layer comprises a silicon compound.

14. An ePTFE self-sealing graft according to claim 7 wherein said flowable polymer layer comprises an uncured polymer.

15. An ePTFE self-sealing graft according to claim 7 wherein said flowable polymer comprises a partially cured polymer.

16. A method of forming a tubular vascular prosthesis comprising the steps of:

providing a first PTFE tubular structure having a given porosity sufficient to promote cell endothelialization and a given strength;

providing a second PTFE tubular structure having a radial strength greater than the radial strength of said first PTFE tubular structure;

disposing an intermediate resealable polymer layer over said first PTFE tubular structure;
and

disposing said second PTFE tubular structure over said intermediate layer to define a composite structure.

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17. A method according to claim 16 wherein said resealable polymer layer comprises an elastomeric layer.

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18. A method according to claim 17 wherein said resealable polymer layer adheres to said first and second ePTFE tubular structures.

19. A method according to claim 17 wherein said elastomeric polymer layer is a fluoropolymer.

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20. A method according to claim 17 wherein said elastomeric polymer layer comprises a helically wound tape.

21. A method according to claim 17 wherein said elastomeric polymer layer comprises a silicon compound.

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22. A method according to claim 16 wherein said resealable polymer layer comprises a flowable layer.

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23. A method according to claim 22 wherein said flowable layer comprises a polymer which penetrates said first and second ePTFE tubular structures.

24. A method according to claim 22 wherein said flowable layer adheres to said first and second ePTFE tubular structures.

25. A method according to claim 22 wherein said flowable layer is a fluoropolymer.

26. A method according to claim 22 wherein said flowable layer comprises a gel.

5 27. An ePTFE self-sealing graft comprising:

a first ePTFE tubular structure;

a second ePTFE tubular structure disposed externally about said first ePTFE tubular structure; and

10 a self-sustained resealable polymer layer interposed between said first and second ePTFE tubular structures.